



# WHY SHOULD HOPS HAVE ALL THE FUN?

s we homebrewers seek to widen the boundaries of beer, we sometimes reach into the past and make use of long-discarded techniques. Wild fermentations and barrel-aging have made a comeback, and so has the use of herbs and spices. In the right hands, these techniques can result in beers as complex and sophisticated as any wine.

Of course, we are brewing herb beer already, but we tend to forget that hops are an herb like any other. We love 'em, but why should they be the only thing we use to season beer? In our search for great beer, why not use everything that's available to us?

#### A DASH OF HERB BEER HISTORY

From the very beginning, we liked our beer with a lot of flavor. The people of the ancient Middle East had a big spice cupboard, and it's likely they put it to good use. Spices like coriander, cinnamon and cumin—all still used in brewing—are well documented. Many of them surely found their way into ancient beer.

Modern analytical techniques like chromatography have revealed details of the chemistry of ancient food and drink, including beer. Researcher Patrick McGovern was responsible for the work behind the Dogfish Head historical beers Midas Touch and Chateau Jiahu. His new book on ancient beverages, *Uncorking the Past: The Quest for Wine, Beer, and Other Alcoholic Beverages* is fascinating reading for anyone interested in the topic.

Residues from vessels have demonstrated that the ancient tribes of Northern

Europe used herbs such as sweet gale (*Myrica gale*), juniper and meadowsweet (*Filipendula ulmaria*) in their beers and meads, and these are still used today in farmhouse brews such as Finnish Sahti. The Scots were famous for the use of heather blossoms as a beer seasoning.

Before about 900 CE, hops were unknown in beer, so other substances lent their bitterness and flavor. A seasoning mix called gruit was the monopoly of the local bigwig; its high price and mandatory use constituted an early beer tax. A trio of wild herbs including sweet gale is usually cited as the backbone of gruit, along with more normal culinary spices such as nutmeg, juniper and others. Gale has a pleasant resiny taste, finds use in Scandinavian and Scottish historical beers, and actually makes a nice addition to a beer like saison. The other two herbs, yarrow and Ledum palustre, are unpleasant tasting and mildly toxic, so there is clearly a lot about gruit beer we don't understand. The switch to hopped beer in Europe began about 1000 CE and was complete by 1500, although the use of sweet gale continued in the backwoods until modern times.

Spiced beers were widespread in preindustrial England, but by the early 18th century, a law was enacted that specified only malt and hops be used, and a tax was paid on these ingredients. Wealthy landowners, who maintained breweries on their property to lubricate staff and family, were not subject to these limitations, so the recipes of these house breweries abounded with alternate seasonings including coriander, ginger, grains of paradise, orange peel, licorice and other spices. Rare old

BY RANDY MOSHER



# MACKENZIE'S WINDSOR ALE

# All-Grain Recipe (calculated @ 75% efficiency)

This is one of those rustic English country ales that have a lot in common with what we think of as Belgian brewing. It was taken from Mackenzie's 5000 Receipts (Philadelphia, 1851), but the recipe resembles an earlier one in Morrice's Practical Treatise on Brewing the Various Sorts of Malt Liquors (London, 1819). It's a mouthful.

## Ingredients for 5 U.S. gallons (19 liters)

#### 15.5 lb (7 kg) Maris Otter pale ale 2.0 oz (57 g) Honey, added at the end of the boil

1.0 oz (28 g) E. Kent Golding pellets 5% AA (90 min) (28 g) E. Kent Golding 1.0 oz

pellets 5% AA (30 min) (28 g) E. Kent Golding 1.0 oz pellets 5% AA (5 min)

0.14 oz(4 g) Indian coriander (end of boil)

0.07 oz (2 g) Grains of paradise (end of boil)

0.35 oz (10 a) Ground licorice root\* (end of boil)

0.14 oz(4 g) Sour/bitter orange zest (Spice House) (end of boil)

0.05 oz (1.5 g) Ground ginger 0.05 oz (1.5 g) Ground caraway Your favorite London ale

yeast

\* Generally available at Indian grocery stores. Can substitute 1/2 stick of brewers licorice.

Original Gravity: 1.088/21°P

Alcohol: 8.5% abv Color: deep tawny gold Bitterness: 28 IBU

## **Directions**

Mash 1 hour at 153° F (64° C), then step up to a mash out at 170° F (77° C) with an addition of near-boiling water. Hop calculations are based on pellets. Figure on 25 percent more if using whole hops. If you want to be completely authentic, the original recipe suggested soaking the hops overnight in cold water and then adding the hops and the water to the kettle. At racking, add 1.5 g each of ground ginger and ground caraway. Ferment at normal cellar temperatures (60-68° F/16-20°C). This would be a good candidate for some extended wood aging if desired. Serve at low carbonation levels, ideally as real ale in cask or bottle.

Partial Extract Version: Extract + steeped grain recipe can be made by substituting 9.3 lb (4.2 kg) of pale dry extract plus half a pound (250 g) of pale/20°L crystal malt for the Maris books like The London and Country Brewer are full of fascinating recipes and are available for free on the Internet.

Licorice was especially popular in darker beers such as porter, and one early 19thcentury brewing writer noted that if it didn't have licorice in it, then it wasn't really porter. Both powdered root and a solid extract called "Spanish juice" (identical to modern brewers' licorice) were used to give the beer an unctuous quality and sweetish finish. Capsicum (chili pepper) is also common in the old 18thcentury porter recipes.

There was also a sinister side to spiced beers in England. Unscrupulous brewers battling cheap gin resorted to illegal, narcotic and toxic seasonings like Cocculus indicus, a stimulant berry from Asia, and Faba amara, aka bitter bean, which contained strychnine. With the help of crusading brewer Frederick Accum, who wrote about the problem in the first "pure food" book on any subject, the problem was cleaned up by about 1810. And with the closing of the country house breweries during the 19th century, English spiced beers' tradition passed into oblivion.

#### THE BELGIAN APPROACH

We tend to think of the traffic between England and Flanders as being onedirectional—after all, it was the Flemish who first brought hops to England when they began moving into Kent around 1400. But loads of English and Scottish beer was being shipped into Flanders as well and local brewers would have taken notice. G. Lacambre. in his monumental tome Traité Complet de la Fabrication des Bières (Brussels, 1851), mentions coriander, grains of paradise, orange peel and a number of others, and says "of course we all understand these are English spices." So the history we think we know is not as solid as we would like to believe.

The Belgians developed a taste for these "English" spices, and they are still found in many Belgian beers, including saison, strong dark ales, and the many eccentric beers unrelated to any style. The Belgian touch with spices is a light one. Spices are used to augment the flavors of the are used to augment the flavors of the ingredients or yeast, and give the beer

**ZYMURGY** March/April 2010 www.HomebrewersAssociation.org



a unique twist. If you can pick out an individual spice, the brewer is doing something wrong.

Witbier is always spiced to some degree, with orange peel and coriander as the base. Pierre Celis once confided to me that his "secret" ingredient was chamomile. You never know whether such a nugget from a crafty old brewer like Pierre is a gift or a trick to throw you off track, but he wasn't kidding. I've brewed witbier with and without and can confirm that chamomile adds a soft "Juicy Fruit" aroma

characteristic of Celis' withiers.

Coriander seed can be problematic. Much of the coriander for sale through culinary sources has a strong vegetal quality—think stale hot dog water (coriander is the primary seasoning in hot dogs). This can wreck the mood of your delicate witbier, so choose your coriander carefully. I have found six or more different types, each with its own distinct aroma. For brewing I prefer the pale, oblong Indian variety (mild, fruity, a little citrusy) or the small Chinese types (pungent, piney, almost

# **RESOURCES**

#### **Gernot Katzer's Spice Pages**

A great site with detailed information on a large range of spices and herbs, but nothing for sale.

www.uni-graz.at/~katzer/engl/index.html

#### **Wild Weeds**

Botanical/herbal supplier with a big list. They have Myrica gale. www.wildweeds.com

#### **Monteagle Herb Farm**

Another botanical supplier. www.monteagleherbs.com

## **San Francisco Herb Company**

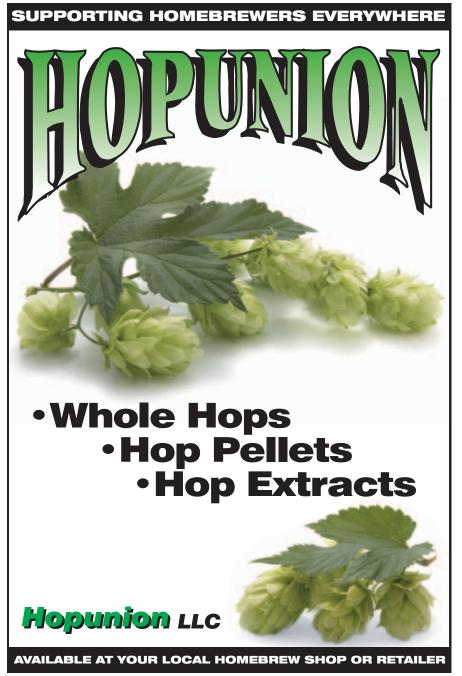
Large culinary herb supplier. www.sfherb.com

## **The Spice House**

Culinary herbs and spices including bitter orange and grains of paradise. Retail stores in many cities. www.spicehouse.com

## **Penzeys**

Culinary herbs and spices. Retail stores in many cities. www.penzeys.com



www.HomebrewersAssociation.org March/April 2010 **ZYMURGY** 

menthol). Coriander is cheap and easy to find at all kinds of ethnic markets, so get out there and get a snootful.

Orange peel is most often from the sour/ bitter/Seville orange, known as Curaçao when in its green, unripe form. It is sold to brewers as chunks of whole peel, which have the potential to impart a "pithy" bitterness to the beer. Culinary spice suppliers like The Spice House offer a coarsely ground dried zest that is quite nice. If you live near a Caribbean neighborhood, you may be able to find fresh sour oranges. The peel of half an orange, shaved off with a potato peeler, will season 5 gallons. A workable substitute can be made from two parts sweet orange to one part grapefruit peel.

Darker beers may use licorice, star anise or cumin to add a little mystery. Spices like grains of paradise, black pepper, long pepper (*Piper longum*, a close relative of black pepper) or even mustard seeds can add aromatic top-notes that complement the phenolic dryness of many stronger pale Belgians. Saison Pipaix even uses a "medicinal lichen" (probably *Pulmonaria lobelia*) as a seasoning, so it can get pretty wacky out there.

Lacambre also mentions elderflower (*Sambucus nigra L.*), another herb with a strong English connection. It has sweetish floral and grassy aromas, especially appropriate for lighter and more delicately flavored beers. Lime leaves (politeness suggests the racially derogatory term *kaf-fir* not be used) can be used, *sparingly*, to impart a pungent citrusy note, also best in pale beers.

#### AMERICAN HERB BEERS

Early Americans were much more likely to be sipping rum, cider or whisky than beer. The lack of quality brewing ingredients often meant that beer was brewed "of pumpkins and parsnips and walnuttree chips," as the old ditty goes. The use of a mildly toxic plant called wood sage (Teucrium canadense) as a bittering agent was common before the Germans brought their "modern" lager to these shores. The Wahl-Henius Handy Book (1906) mentions a brown ale called Pennsylvania Swankey that was seasoned with aniseed. In Alaska, sitka spruce tips are so rich in vitamins and sugar that native people used them as a spring tonic, and early settlers often added them to whatever homebrew they made. Alaskan Brewing Co. founder Geoff Larson became fascinated by the idea, and uses spruce tips to season Alaskan Winter Ale. It is sweetish and deeply fruity, not the piney mouthful that one might expect.

The *Reinheitsgebot*-toting Germans threw all that out when they started brewing here, and their "pure" style of beer still dominates the market nearly 170 years later.

It wasn't until the resurgence of homebrewing in the late-1970s that beers with alternate seasonings were regularly brewed here. And with many homebrewers turning pro, those notions came right along with them into their commercial breweries. Like Dogfish Head's Sam

# **NEW CLAUDE OF ZEPLY**

# All-Grain Recipe (calculated @ 75% efficiency)

This is a strongish Belgian-inspired spiced amber wheat ale brewed by myself and my original brewing partner, Ray Spangler. It was served as the AHA conference beer way back in 1990, and always was a tremendous crowd-pleaser.

# Ingredients for 5 U.S. gallons (19 liters)

#### 2.0 lb (1.4 kg) Pale ale malt 4.0 lb (1.8 kg) Munich malt 1.5 lb (680 g) Melanoidin malt 4.0 lb (1.8 kg) Wheat malt (454 g) Oatmeal, toasted 1 0 lb until it smells like cookies 4.0 oz (67 g) Special B/very dark crystal 0.5 oz (13 g) Northern Brewer pellets 8.5% AA (60 min) 0.5 oz (13 g) Northern Brewer pellets 8.5% AA (30 min) 0.5 oz (13 g) Coriander (Chinese or Indian) (end of boil) 2.0 oz (67 g) tangerine zest (end of boil) 2.0 oz (67 g) Indian coriander 1.0 oz (28 g) tangerine zest 2.0 oz (57 g) Long pepper, cracked (substitute black pepper if unavailable) 2.0 oz (57 g) Star anise, whole 4.0 oz Cassia buds, whole or 1.0 oz (28 g) Crushed cocoa nibs

Original Gravity: 1.069/16.8°P

strain yeast

(optional)

Belgian wheat or abbey

Alcohol: 6.4% abv

Color: deep amber, calculated at

14° SRM **Bitterness:** 24 IBU

## **Directions**

Mash 1 hour at 152° F (67° C). Hop calculations are based on pellets. Figure on 25 percent more if using whole hops. Mix all the spices with enough cheap vodka to generously cover, and allow to stand for about a week. Drain through a coffee filter and add to beer at bottling or kegging. If you're spice-shy, do a test with an ounce of beer and a pipette or syringe. Try varying amounts of the potion until you determine the desired level of dosing, then scale up and add the appropriate amount.

Mini-Mash Version: Substitute 3.5 lb/1.6 kg of amber dry extract for the pale and Munich, and mash the rest of the ingredients for an hour at 150° F (66° C). Add the drained, sparged wort to the extract.



**ZYMURGY** March/April 2010 www.HomebrewersAssociation.org

Calagione, many were brewing with tiny systems, which meant they had to brew a batch nearly every day to keep the taps flowing. Calagione says, "I got bored with the same old beers. I would wander into the kitchen and ask 'Whaddya got?' and then throw that in the brewpot."

Holiday brews were the first to emerge. Inspired by English traditions of "wassailing," these dark, warming brews are cornucopias of spice: cinnamon, nutmeg, ginger, allspice and more. Anchor's Our Special Ale was one of the earlier ones. The Anchor staff is sworn to secrecy on this, but it's clear that the beer changes year by year. The mystery is part of the pleasure. Be cautious; heavily spiced holiday brews can be overbearing, so use restraint. Making a tincture of herbs in cheap vodka is a good way to draw out the flavors of spices, and the ability to test-dose the mix in an ounce or two of beer makes it easy to get the right quantity into the beer. After filtering through a coffee filter, the tincture can be added at bottling or kegging.

Pumpkin beer is theoretically about the squash, but really is about the spice mix. Checking a pie recipe to get the proportions right is the key, and don't overdo it.

The shockingly high prices of hops have recently led brewers to look for bitter substitutes. In various times and places, gentian, wormwood, quassia, blessed thistle and many other plants have been used. In the last couple of years, New Belgium has produced seasonal beers bittered with wormwood and dandelion. Many of these hop substitutes can be searingly bitter and can contribute a bitterness that's much harsher and less pleasant than hops.

Small-scale brewing is part of a global trend in food, and reflects a fusion of the local and the exotic, formed by our diverse experiences and expressive of the curiosity and passion of the people behind the products. This attitude makes for some very personal expressions, sometimes a risky approach, but has potential for high art.

Craftsman Brewing's Mark Jilg has been making a Triple White Sage for several

years, using the outdoorsy-scented herb gathered from the San Gabriel Mountains that rise above Pasadena. The resulting beer tastes of the place in a way few beers can. A bit south in Orange County, Patrick Rue's The Bruery uses spices to good effect in several Belgian-inflected beers. Their Trade Winds Tripel is seasoned with Thai basil; Orchard White contains lavender in addition to the more orthodox coriander and orange peel. At Elysian in Seattle, Dick Cantwell cooked up an exotic IPA called Avatar, scented with whole jasmine flowers. At Archipelago Brewery in Singapore, ex-

pat Fal Allen is using local ingredients like calamansi limes and pandan fruit for beers that resonate with the local culture and cuisine. Once you start looking, there are unlimited possibilities: ginger, lemongrass, woodruff, ginseng, sweet flag, vanilla and many, many others.

Coffee and chocolate deserve a whole article of their own, but current consensus is that roasted cocoa nibs steeped in the secondary give the most luxurious and complete chocolate flavor. Sam Adams reportedly uses half a pound per barrel in its Chocolate Bock, which works out





www.HomebrewersAssociation.org March/April 2010 **ZYMURGY** 





to 1.5 ounces for a five-gallon batch. For coffee, a cold-water extraction gives the smoothest taste. Steep coarsely ground coffee in cold water (8 ounces for every ounce of coffee) for 12 hours, drain through a screen filter, then add the liquid to the secondary. Recipes vary from 0.75 ounce to 1.5 ounces of coffee per 5-gallon batch.

#### **USING HERBS AND SPICES**

Herbs and spices are most often simply tossed into the kettle in the last five minutes of the boil or at knockout. "Otherwise," says Pierre Celis, "it is just for the neighbors, eh?" Different herbs and spices vary hugely in their strength, from no more potent than hops to very powerful. Some of the old English books give quantities of grains of paradise as small as a few grams per barrel. A single spice such as cinnamon or coriander may have a fourfold variation in intensity depending on the source, variety and freshness. And of course, what the seasoning is doing in a recipe varies as well, so in terms of quantity, there's no easy recommendation except it's better to be conservative until you have some experience with a particular spice.

As with hops, spices can be added to the conditioning tank if placed in a fine mesh bag and steeped for days or weeks. This method takes advantage of the fact that alcohol is an excellent solvent, and pulls out some of the aromatic compounds water alone might have a hard time extracting. It also gives you an opportunity to fine-tune the beer if your end-of-boil additions were a little too timid.

Get your nose in them and you'll find the astonishing range and captivating charm of spices are nothing short of miraculous. It's no wonder people used to trade their weight in gold for them. Herbs and spices may be just another tool in your kit, but they're a valuable one. Used with the right touch, they can add a world of amazing possibilities to your beers, and *that's* the spice of life.

Randy Mosher is the author of Radical Brewing and the new book Tasting Beer and a member of the AHA governing committee. He lives in Chicago.

**ZYMURGY** March/April 2010 www.HomebrewersAssociation.org